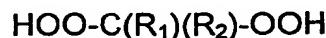


## CLAIMS

22.08.2003

1. A composition of a ketone peroxide comprising

- a) a peroxide derivative of the formula



wherein

$\text{R}_1$  is a branched or unbranched alkyl group with 1 to 4 carbon atoms or alkenyl group with 2 to 4 carbon atoms; and

$\text{R}_2$  is a branched or unbranched alkyl or alkenyl group with 5 to 12 carbon atoms; and

- b) a branched or unbranched hydrocarbon solvent;

the peroxide derivative of a) having a solubility more than 40 g in 100 g of the solvent of b) at 20°C; and

comprises less than 10 wt.% of a peroxide derivative of the formula



wherein  $\text{R}_1$  and  $\text{R}_2$  have the previously given meanings.

2. The composition of claim 1 wherein  $\text{R}_1$  and  $\text{R}_2$  are alkyl groups.

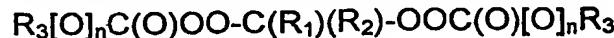
3. The composition of claim 2 wherein  $\text{R}_1$  is a methyl group and  $\text{R}_2$  is an isoamyl or amyl group.

4. The composition of any one of claims 1-3 wherein the solvent is a saturated aliphatic hydrocarbon.

5. A composition of a ketone peroxide derived bis-peroxyester, bis-

peroxycarbonate, or mixed peroxyester-peroxycarbonate comprising

- a) a ketone peroxide derived bis-peroxyester, bis-peroxycarbonate, or mixed peroxyester-peroxycarbonate derivative of the formula



wherein

$\text{R}_1$  is a branched or unbranched alkyl group with 1 to 4 carbon atoms or alkenyl group with 2 to 4 carbon atoms; and

$\text{R}_2$  is a branched or unbranched alkyl or alkenyl group with 5 to 12

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carbon atoms; and

R<sub>3</sub> is independently selected from a branched or unbranched alkyl group with 1 to 12 carbon atoms, alkenyl group with 2 to 12 carbon atoms; and an aromatic group with 6-12 carbon atoms,

n is independently 0 or 1, and

- b) a branched or unbranched hydrocarbon solvent;

and

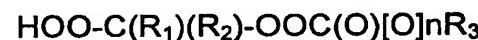
comprising less than 10 wt.% of a peroxide derivative of the formula



wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and n have the previously given meanings.

6. A composition of a ketone peroxide derived monoperoxyester or monoperoxycarbonate comprising

- a) a ketone peroxide derived monoperoxyester or monoperoxycarbonate derivative of the formula



wherein

R<sub>1</sub> is a branched or unbranched alkyl group with 1 to 4 carbon atoms or alkenyl group with 2 to 4 carbon atoms; and

R<sub>2</sub> is a branched or unbranched alkyl or alkenyl group with 5 to 12 carbon atoms; and

R<sub>3</sub> is selected from a branched or unbranched alkyl group with 1 to 12 carbon atoms, alkenyl with 2 to 12 carbon atoms; and an aromatic group with 6-12 carbon atoms;

n is 0 or 1, and

- b) a branched or unbranched hydrocarbon solvent;

and

comprising less than 10 wt.% of a peroxide derivative of the formula



wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and n have the previously given meanings.

7. A process for the preparation of a composition of any one of the claims 1-

4comprising the step wherein a ketone of the formula O=C(R<sub>1</sub>)(R<sub>2</sub>), wherein R<sub>1</sub> and R<sub>2</sub> have the previously given meanings, is reacted with hydrogen peroxide

in the branched or unbranched hydrocarbon solvent in the presence of an acidic catalyst.

8. Use of the composition of any one of claims 1-6 for polymerizing vinylchloride, (meth)acrylic monomers, styrene, ethylene, or mixtures thereof, for curing unsaturated polyester or vinylester resins, for grafting monomers onto a polymer, for crosslinking a polymer or for degrading a polymer.